



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,698	07/25/2003	Hong-Long Chou	TAIW 155	2688
7590	07/26/2005		EXAMINER	
RABIN & BERDO, P.C. Suite 500 1101 14th Street, N.W. Washington, DC 20005			BRAUTIGAM, ALYSA N	
			ART UNIT	PAPER NUMBER
			2676	

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/626,698	CHOU ET AL.	
	Examiner	Art Unit	
	Alysa N. Brautigam	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 05 May 2005.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 25 July 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see pages 7-8, filed 5 May 2005, with respect to the rejection(s) of claim(s) 1-8 under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kichury (6,057,850) in view of Teo et al. (6,385,349).

Specification

2. Applicant's arguments and/or amendments, see pages 2-3 and 7, filed 5 May 2005, with respect to the following have been fully considered and are persuasive:

- Abstract, Line 3
- Abstract, Lines 3-6
- Abstract, Line 8
- Page 5, Line 13
- Page 5, Lines 20-21

The objection to the specification has been withdrawn.

Claim Objections

Art Unit: 2676

3. Applicant's arguments and/or amendments, see page 6, filed 5 May 2005, with respect to claim 8, have been fully considered and are persuasive. The objection to claim 8 has been withdrawn.

Claim Rejections - 35 USC § 112

4. Applicant's arguments and amendments, see pages 5-7, filed 5 May 2005, with respect to the following have been fully considered and are persuasive:

- Claim 1, Line 8: "**comparing** the image with the texture mapping within the spatial coordinate system..."
- Claim 1, Line 12: "**using a prescribed condition to select** the texture..."
- Claim 1, Line 15: "making the pixels...continuous..."
- Claim 1, Line 15: "the plaquette"
- Claim 1, Line 16: "restoring the polygon..."
- Claim 4 – Referring to the limitation wherein the texture normalization uses the pixel intensities of the polygons in both the image and the texture mapping to compute a weighted average for adjustment.
- Claim 6 - Referring to the method of claim 1 and the "step of making the pixels of the polygon texture continuous..."

The aforementioned 35 USC § 112 Rejections of claims 1-8 have been withdrawn.

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it; in such full, clear, concise, and exact terms as to enable any person skilled in the

Art Unit: 2676

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Line 6: States the limitation - “**converting** the image and the texture mapping to a common spatial coordinate system” where the specification only says the “same spatial coordinates have to be used.” In other words, the specification does not disclose conversion of spatial coordinate systems.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kichury (6,057,850) in view of Teo et al. (6,385,349).

9. In regards to claim 1, Kichury discloses a multilevel texture processing method for mapping multiple images onto a 3D model with a texture mapping (col. 2: 44-49), the method comprising the steps of:

- providing an image to the 3D model (Abstract; col. 1: 40-54; col. 4: 33-35,30-33; col. 6: 64-65);

- converting the image and the texture mapping to a same spatial coordinate system and dividing them into a plurality of polygons (col. 1: 48-54; col. 4: 30-34; col. 7: 48-54; col. 7: 61 through col. 8: 14);
- extracting overlapped polygons from the image with the texture mapping within the spatial coordinate system (col. 6: 13-26);
- using the pixel intensity of the overlapped polygons to compute a statistics mean for adjusting the pixel intensity of the image accordingly (col. 5: 35-65);
- using a prescribed condition to select the texture of one of the image and the texture mapping as the texture of the polygon (col. 6: 13-26 – depth sorting);
- smoothing the texture of the polygon (col. 6: 32-47);
- making the pixels inside the polygon continuous (col. 7: 55-60; col. 8: 15-24); and
- restoring the polygon and outputting the 3D model (col. 8: 34-45).

While Kichury discloses the method of multilevel texture processing method for mapping multiple images onto a 3D model with a texture mapping including comparing the image with the texture mapping within the spatial coordinate system and extracting overlapped polygons, Kichury does not specifically disclose wherein using the pixel intensity of the overlapped polygons to compute a statistics mean for adjusting the pixel intensity of the image accordingly. Teo discloses a system and method for merging a plurality of images which overlap wherein using the pixel intensity of the overlapped polygons to

compute a statistics mean for adjusting the pixel intensity of the image accordingly (Figure 7C; column 10, lines 21-46; column 15, lines 44-56). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Kichury and Teo to achieve a system and method in which multiple images are merged and in which the intensity of the overlapping regions is used to modify the intensity of a single image in order to provide a single image having a consistent brightness and thus avoid visual artifacts associated with different lighting parameters.

10. In regards to claim 2, the combination of Kichury and Teo discloses the method of claim 1, as contained hereinabove. In addition, Kichury discloses wherein the prescribed condition is selected from the group consisting of resolution, polygon orientation, and camera viewing perspective (col. 7: 61-63).

11. In regards to claim 3, the combination of Kichury and Teo discloses the method of claim 1, as contained hereinabove. In addition, Kichury discloses wherein the step of smoothing the texture of the polygon includes texture normalization and texture blurring (col. 5: 24-28).

12. In regards to claim 4, the combination of Kichury and Teo discloses the method of claim 3, as contained hereinabove. In addition, Kichury discloses wherein the texture normalization uses the pixel intensities of the polygons in both the image and the texture mapping to compute a weighted average for adjustment (col. 5: 24-28, 56-65).

13. In regards to claim 5, the combination of Kichury and Teo discloses the method of claim 3, as contained hereinabove. In addition, Kichury discloses wherein the texture

blurring uses the textures of the polygon and its neighboring polygons to compute a weighted average for adjustment (col. 5: 24-28, 56-65; col. 6: 12-65).

14. In regards to claim 6, the combination of Kichury and Teo discloses the method of claim 1, as contained hereinabove. In addition, Kichury discloses wherein the step of making the pixels of the polygon texture continuous is achieved by mixing colors with the neighboring polygons (col. 6: 32-47).

15. In regards to claim 7, the combination of Kichury and Teo discloses the method of claim 6, as contained hereinabove. In addition, Kichury discloses wherein the step of mixing colors includes the steps of extracting a pixel on the border of the polygon with discontinuous colors and computing a weighted average of the intensities of the pixel and its nearest neighboring pixels as a new intensity of the pixel (col. 6: 32-55).

16. In regards to claim 8, the combination of Kichury and Teo discloses the method of claim 7, as contained hereinabove. In addition, Kichury discloses wherein the step of computing a weighted average of the intensities of the pixel and its neighboring pixels as a new intensity of the pixel is followed by the steps of computing the difference between the weighted average intensity and the original pixel intensity and using the pixel intensity difference to adjust the intensities of the rest pixels inside the polygonal texture (col. 6: 32-55).

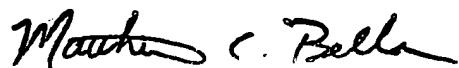
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb



MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600